

— Claims PTO —
2/6/04 EWS

AMENDMENTS TO THE CLAIMS

Applicants respectfully request the cancellation of Claim 58, for the reasons detailed below.

Claims 1-47 (previously cancelled).

Claim ~~48~~ (previously presented): A method of screening for preneoplastic/neoplastic disease associated with abnormal MN gene expression comprising:

(a) determining whether abnormal MN gene expression is present in a vertebrate using a nucleic acid based assay on a sample from said vertebrate; and

(b) if abnormal MN gene expression is determined to be present in said vertebrate, determining that said vertebrate has a significant risk of having preneoplastic/neoplastic disease;

wherein said MN gene encodes an MN protein that is encoded by a nucleic acid having a nucleotide sequence selected from the group consisting of:

(1) SEQ ID NO: 1;

(2) nucleotide sequences that hybridize under stringent conditions to complement of SEQ ID NO: 1; and

(3) nucleotide sequences that differ from SEQ ID NO: 1 or from the nucleotide sequences of (b) in codon sequence due to the degeneracy of the genetic code.

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1/~~48~~ Claim ~~49~~ (previously presented): The method of claim 48 wherein said MN protein is encoded by SEQ ID NO: 1.

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2/~~49~~ Claim ~~50~~ (previously presented): The method of claim 49 wherein said vertebrate is a mammal.

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2/~~49~~ Claim ~~51~~ (previously presented): The method of claim 49 wherein said vertebrate is a human.

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4/~~51~~ Claim ~~52~~ (previously presented): The method of claim 51 wherein said nucleic acid based assay is a polymerase chain reaction based assay.

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4/~~51~~ Claim ~~53~~ (previously presented): The method of claim 51 wherein detecting abnormal MN gene expression comprises:

(a) obtaining mRNA from said sample from said human;

and

(b) detecting the presence of mRNA that is complementary to MN cDNA in the mRNA obtained from step (a), or

quantitating any mRNA that is complementary to MN cDNA in the mRNA obtained from step (a);

wherein the presence of mRNA complementary to MN cDNA in said mRNA obtained in step (a), or an abnormal level of mRNA complementary to MN cDNA in said mRNA obtained in step (a), indicates the presence of preneoplastic/neoplastic disease in said human.

4, Claim ¹54 (previously presented): The method of claim 51 wherein abnormal MN gene expression is detected by:

(a) obtaining mRNA from a sample from said human;
(b) preparing cDNA from the mRNA from step (a);
(c) amplifying any DNA encoding a MN protein or a MN polypeptide that is present in the cDNA prepared in step (b);
and

(d) detecting the presence of any resulting amplified DNA, or quantitating any resulting amplified DNA, wherein the presence of such amplified DNA or an abnormal level of said amplified DNA indicates the presence of preneoplastic/neoplastic disease in said human.

7, Claim ⁸55 (previously presented): The method of claim 54, wherein the step (c) amplification of DNA is effected by a

polymerase chain reaction utilizing at least two oligonucleotide primers.

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Claim ~~56~~ (previously presented): The method of claim ~~55~~ wherein each of the primers is capable of specifically hybridizing with DNA that encodes MN protein.

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Claim ~~57~~ (previously presented): The method of claim ~~56~~ wherein said DNA that encodes MN protein has the nucleotide sequence of SEQ ID NO: 1.

Claim 58 (canceled)

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Claim ~~59~~ (previously presented): The method of claim ~~54~~, wherein the presence of any amplified DNA in step (d) is detected using a labeled MN nucleic acid probe which specifically hybridizes with any amplified MN DNA.

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Claim ~~60~~ (previously presented): The method of claim ~~59~~, wherein the labeled probe is radiolabeled.

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Claim ~~61~~ (previously presented): The method of claim ~~60~~ wherein the labeled probe is radiolabeled with ³²P.

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Claim ~~62~~ (previously presented): The method of claim ~~53~~ wherein said sample is selected from the group consisting of tissue sections, tissue extracts, tissue smears, whole cells, cell lysates, exfoliated cells, cell extracts, and body fluids.

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Claim ~~63~~ (previously presented): The method according to claim ~~62~~ wherein said body fluid is selected from the group consisting of blood, serum, plasma, urine, semen, breast exudate, saliva, sputum, tears, mucous, fecal suspensions, gastric secretions, bile, lymph, cytosols, ascites, pleural effusions, amniotic fluid, bladder washes, bronchioalveolar lavages and cerebrospinal fluid.

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Claim ~~64~~ (previously presented): The method according to claim ~~63~~ wherein said body fluid is selected from the group consisting of blood, serum and plasma.

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Claim ~~65~~ (previously presented): The method according to claim ~~64~~ wherein said body fluid is blood.

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Claim ~~66~~ (previously presented): The method of claim ~~54~~ wherein said preneoplastic/neoplastic disease associated with abnormal MN gene expression is selected from the group consisting of mammary, urinary tract, bladder, kidney, ovarian,

uterine, cervical, endometrial, squamous cell, adenosquamous cell, vaginal, vulval, prostate, liver, lung, skin, thyroid, pancreatic, testicular, brain, head and neck, mesodermal, sarcomal, stomach, spleen, gastrointestinal, esophageal, and colon preneoplastic/neoplastic diseases.

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18 Claim ~~67~~ (previously presented): The method of claim ~~66~~ wherein said neoplastic disease is renal carcinoma.

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8 Claim ~~68~~ (previously presented): The method of claim ~~55~~ wherein each of said primers is an isolated and purified MN nucleic acid, which has a length of from 16 nucleotides to 50 nucleotides, and comprises a nucleotide sequence which is selected from the group consisting of: nucleotide sequences that specifically hybridize to SEQ ID NO: 1 or to the complement of SEQ ID NO: 1; and

wherein an appropriate pair of primers is selected for effective amplification.

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20 Claim ~~69~~ (previously presented): The method of claim ~~68~~ wherein said nucleotide sequence specifically hybridizes to a MN nucleotide sequence contained in any of the plasmids A4a, XE1 and XE3, which were deposited at the American Type Culture

Collection in the United States of America under the respective
ATCC Nos. 97199, 97200 and 97198.